Swine

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General Industry and Terminology

- Define the following terms: animal welfare, animal rights, public perception, animal behavior, nutrient and waste management, air quality.
- Have a working knowledge of contemporary issues in animal agriculture (ie. anti-animal agriculture movement, genetically modified organisms, conventional vs. organic production, food insecurity).
- Understand how to minimize the effects of swine production on the environment.
- Be able to give an elevator speech about animal agriculture and your swine project.

Health and Welfare

- Define the following terms: adjuvant, antimicrobial resistance, Veterinary-Client-Patient Relationship, veterinary feed directive, over the counter, prescription
- Describe the following diseases/conditions in swine: porcine epidemic diarrhea (PEDv), transmissible gastroenteritis (TGE), porcine reproductive and respiratory syndrome (PRRS), atrophic rhinitis, African swine fever, foot and mouth disease
- Differentiate between killed and modified-live vaccines
- Understand swine behavior to be able to manage swine in a low-stress environment
- Develop a comprehensive biosecurity and vaccination plan for your swine operation
- Develop a comprehensive waste management plan for your swine operation to ensure proper air quality and cleanliness of animal facilities and proper application of waste to land and crops to ensure no nutrient run-off
- Demonstrate your ability to handle, store and dispose of properly needles, syringes and pharmaceuticals

Nutrition and Feeding

- Define the following terms: calorie, digestible energy (DE), metabolizable energy (ME), net energy (NE), essential amino acids, fat-soluble vitamins, water-soluble vitamins, ether extract, ash.
- Identify the following feedstuffs: sorghum, hominy feed, feather meal, meat and bone meal, dicalcium phosphate.
- Understand the difference between feedstuffs on a dry-matter and as-fed basis and be able to calculate each.

- Complete a Pearson-square ration formulation with two feedstuffs.
- Design the feeding and watering plan for your swine herd through the different stages of production.

Reproduction

- Define the following terms: corpus luteum, corpus albicans, corpus hemorrhagicum, follicle, oocyte, scrotum, spermatic cord, spermatocyte.
- Describe the role of the following hormones: estrogen, testosterone, oxytocin, progesterone, prostaglandin, luteinizing hormone, gonadotropin releasing hormone.
- Describe the artificial insemination process in swine and how it is different from other species.
- Define the following reproductive tools and techniques: embryo transfer, estrous synchronization, cryopreservation, in vitro fertilization, pregnancy diagnosis, scrotal circumference, semen morphology, semen motility.
- Design and implement a breeding program and a farrowing protocol for your sow herd.

Genetic and Selection

- Define the following terms: genomics, heritability, heterosis (hybrid vigor), F-1 and F-2 cross.
- Collect a DNA sample.
- Apply EPD and selection indexes to swine mating decisions.
- Understand the role that genetics plays in stress issues with swine (porcine stress syndrome [PSS]; pale, soft, exudative [PSE]).

Carcass and Pork Products

- Be able to identify all retail meat cuts from a pork carcass and associate with the correct wholesale cut.
- Understand how the following factors affect pork quality: color, firmness, wetness, marbling.
- Understand the factors that affect USDA grade.
- Be able to calculate dressing percentage and percent muscle.
- Use carcass measurements to estimate the quantity of retail product from a carcass and the overall value of the products.
- Identify 10 non-meat products from hogs .

Equipment and Record-Keeping

- Demonstrate the ability to use swine equipment learned about in previous levels (i.e., ear notch a baby pig).
- Understand and be able to use the equipment needed for low-stress handling and management of swine.

Extra Learning Opportunities

Listed below are contests and other activities where youth have the opportunity to showcase what they have learned in the 4-H Swine Project.

- Youth for the Quality Care of Animals Certification.
- Assist younger youth.
  - Invite younger members to visit your farm to learn how you manage your swine.
  - Lead a showmanship clinic.
  - Coach a junior skillathon team.
- Livestock Skillathon Contest.
- Livestock Judging Contest.
- Livestock Quiz Bowl.
- Swine Show and Showmanship.
- Attend 4-H Roundup in swine if in appropriate grade.
- Tour other swine operations in your area and talk to the owner/manager to learn how they manage their swine herd.

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